

AMENDMENT TO THE CLAIMS

Please cancel claims 21-23 and 40-42 without prejudice; amend claims 24, 27, and 32, matter to be deleted is shown in strike through and matter to be added is shown in underline, and add new claims 43-48 as follows:

Claims 1-23 (cancelled)

24. (currently amended) An oil burner assembly, comprising:

a) a manifold i) constructed of a unitary body of a thermally transmissive material, ii) having first and second continuous, ~~unbroken~~ passageways, wherein said first passageway terminates in a first cavity, wherein an oil distribution port of a nozzle is coupled to said first cavity ~~a portion of a nozzle having an oil distribution port mounts in sealed engagement to said first cavity;~~

b) a source of oil coupled to an input of said first passageway and a source of heated liquid coupled to an input and an output of said second passageway such that the liquid flows through the second passageway, heats the manifold and transfers the heat to elevate the temperature of said oil to a combustible temperature as the oil is discharged from the oil distribution port ~~sources of oil and a heated liquid respectively coupled to said first and second passageways such that the liquid heats the manifold and transfers the heat to elevate the temperature of said oil admitted to said manifold immediately prior to discharge from said nozzle; and~~

c) an igniter mounted to said manifold and aligned to said nozzle to ignite the heated oil upon discharge from said nozzle.

Claim 25. Cancelled

26. (previously presented) An oil burner assembly as set forth in claim 24 wherein said first and second passageways comprise convoluted paths arranged in displaced tiers, wherein said first passageway includes a convoluted portion and a riser portion coupled to said convoluted portion that passes through the tier containing said second passageway and terminates in said first cavity.

27. (currently amended) An oil burner assembly as set forth in claim 24 including a third passageway that terminates in a second cavity coaxially coupled to and positioned forward of said first cavity, wherein said nozzle includes an air passageway, wherein said air passageway is mounted in said second cavity and including a source of pressurized air coupled to said third passageway to direct heated air via said air passageway to atomize the heated oil as it is discharged from the oil discharge port ~~a plurality of air atomizing ports contained in said second cavity and further including a source of pressurized air coupled to said second cavity such that said air is heated and isolated from said oil until immediately upon said oil being emitted from said nozzle.~~

Claims 28 and 29. Cancelled

30. (currently amended) An oil burner assembly as set forth in claim 27 wherein said third passageway includes a narrowed region coupled to said second cavity and wherein said second cavity abuts and is concentrically aligned to said first cavity ~~whereat the heated air is compressed prior to being admitted to said second cavity and wherein said second cavity abuts said first cavity and is concentrically aligned to said atomizing ports.~~

Claim 31. cancelled

32. (currently amended) An oil burner assembly as set forth in claim 27 wherein a narrowed region of said third passageway communicates with said second cavity ~~including a seal mounted in said first cavity to engage said nozzle to prevent oil from entering said second cavity, and wherein a narrowed region of said third passageway communicates with said second cavity to increase the pressure of air admitted to the second cavity.~~

Claim 33-42. cancelled

43. (new) A method of operating an oil burner, comprising the steps of:

- a) providing a source of oil;
- b) providing a source of heated liquid;

c) providing a manifold supporting a nozzle having an oil distribution port and constructed of a solid thermally transmissive block of metal containing first and second displaced, continuous channels formed into said manifold and wherein the oil distribution port is coupled to an output of said first channel;

d) coupling said source of oil to an input of said first channel and said source of heated liquid to an input and an output of said second channel and wherein said first and second channels are arranged in said manifold such that heat from said heated liquid is transferred through said manifold to elevate the temperature of said oil to a combustible temperature and discharge the heated oil from said oil distribution port; and

- e) igniting the heated oil upon discharge from said oil distribution port.

44. (new) A method as set forth in claim 43 wherein said nozzle includes an air passageway, wherein said manifold includes a third channel having first and second portions, wherein said second portion exhibits a cross-section narrower than a cross-

section of said first portion and wherein said second portion communicates with a cavity supporting said air passageway and including the steps of providing a source of pressurized air, and coupling said air source to said third channel to direct heated air via said air passageway to atomize the heated oil upon discharge from said distribution port.

45. (new) A method as set forth in claim 43 wherein said manifold includes a third continuous channel, wherein said first, second and third channels are arranged in displaced tiers, wherein a portion of said first channel passes through the tier containing said second channel, wherein said first channel terminates in a first cavity, wherein said third channel includes a narrowed portion that terminates in a second cavity coupled to and forward end of said first cavity, wherein said nozzle includes an air passageway, and wherein said air channel communicates with said second cavity and said air discharge port and including the steps of providing a source of pressurized air and coupling said air to said third channel to direct heated air via said air passageway to atomize the heated oil discharged from said distribution port.

46. (new) An oil burner assembly, comprising:

a) a manifold i) constructed of a unitary body of a thermally transmissive material, ii) having first, second and third continuous internal channels formed in displaced first, second and third tiers in the material, wherein said first channel includes a convoluted portion and a riser portion that transects a portion of said second tier and terminates at a first cavity, wherein a narrowed portion of said third channel terminates at a second cavity concentrically extending forward from said first cavity, wherein a nozzle having an oil distribution port and an air passageway is mounted to said manifold such

that said oil distribution port communicates with said first cavity and said air passageway communicates with said second cavity;

b) sources of oil, a heated liquid and pressurized air, wherein said source of oil is coupled to said first channel to direct oil to said oil distribution port, wherein said source of heated liquid is coupled to an input and an output of said second channel to heat the manifold and transfer heat to elevate the temperature of said oil to a combustible temperature, wherein said source of air is coupled to said third channel to direct heated air via said air passageway to atomize the heated oil discharged from said discharge port; and

c) an igniter mounted to said manifold and aligned to said nozzle to ignite hot atomized oil upon discharge from said oil distribution port.

47. (new) An oil burner assembly, comprising:

a) a manifold i) constructed of a unitary body of a thermally transmissive material, ii) having first and second continuous, convoluted internal channels formed in displaced first and second tiers in the material, wherein said first channel includes a convoluted portion and a riser portion that transects a portion of said second tier and terminates at a first cavity, wherein a nozzle having an oil distribution port is mounted to said manifold such that said oil distribution port communicates with said first cavity;

b) sources of oil and a heated liquid, wherein said source of oil is coupled to said first channel to direct oil via said oil distribution port, wherein said source of heated liquid is coupled to an input and an output of said second channel to heat the manifold to elevate the temperature of said oil to a combustible temperature as the oil is discharged from said discharge port; and

c) an igniter mounted to said manifold and aligned to said nozzle to ignite hot oil upon discharge from said oil distribution port.

48. (new) An oil burner assembly as set forth in claim 47 including a third continuous channel having a narrowed portion, wherein the narrowed portion terminates in a second cavity coupled forward of said first cavity, wherein said nozzle has an air passageway, wherein said air passageway is mounted in said second cavity, and including a source of pressurized air coupled to said third channel to direct heated air via said air passageway to atomize the heated oil discharged from said discharge port.